REMARKS

Claims 1-13 are all the claims pending in the application. By this Amendment, Applicant adds claims 9-13. Claims 9-13 are clearly supported throughout the specification, e.g., pages 1, 3, and 5 of the specification.

In addition, Applicant editorially amends claims 1-8. The amendments to claims 1-8 were made for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. The amendments to claims 1-8 were not made for reasons of patentability.

Preliminary Matters

Applicant thanks the Examiner for initialing the references listed on form PTO/SB/08 submitted with the Information Disclosure Statement filed on September 9, 2003. Applicant also thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received.

The Examiner, however, failed to initial the Form 1449A submitted with the Information Disclosure Statement filed on September 4, 2001. Therefore, Applicant respectfully requests that the Examiner initial the appropriate boxes on the Form 1449A indicating that the documents have been reviewed and return this form to the Applicant in the next office action. For the Examiner's convenience, a copy of Form 1449A is enclosed.

Request for Drawings

The Examiner alleges that Drawings are required to facilitate the understanding of the invention (see page 2 of the Office Action). Applicant respectfully submits that one of ordinary

skill in the art would understand the invention without the Drawings and that the Drawings are

not necessary to understanding the invention.

If, however, the Examiner feels that Drawings would facilitate understanding of one of

ordinary skill in the art, Applicant respectfully invites the Examiner to explain in more detail the

type of illustration thought to be necessary and why such a drawing is essential.

Objection to the Specification

Applicant thanks the Examiner for pointing out with particularity minor informalities in

the specification. Applicant respectfully requests the Examiner to withdraw these objections in

view of the self-explanatory amendments made herein.

Claim Rejections under 35 U.S.C. § 102

Claims 1-4 and 6-8 stand rejected under 35 U.S.C. § 102. Applicant respectfully

traverses this rejection in view of the following remarks.

To be an "anticipation" rejection under 35 U.S.C. § 102, the reference must teach every

element and recitation of the Applicant's claims. Rejections under 35 U.S.C. § 102 are proper

only when the claimed subject matter is identically disclosed or described in the prior art. Thus,

the reference must clearly and unequivocally disclose every element and recitation of the

claimed invention.

Claims 1-3

First, claims 1-3 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by

U.S. Patent No. 5,815,660 to Momona (hereinafter "Momona"). Applicant respectfully traverses

this rejection and respectfully requests the Examiner to reconsider this rejection in view of the

comments, which follow.

Of these claims 1-3, only claim 1 is independent. Claim 1 requires among a number of

unique features:

> interrupting the transmission of transmit
> authorizations from the second transmitting /
> receiving device to the first transmitting /
> receiving device when the data packet is received

The Examiner asserts that claim 1 is directed to a method of transmitting data from the first

device to the second device and is anticipated by the teachings of Momona. The Examiner

asserts that Momona's master station having means for stop sending the polling signal to the

slave station is equivalent to interrupting the transmission of transmit authorization from the first

device to the second device when the data packet is received (see page 3 of the Office Action).

Applicant respectfully disagrees with the Examiner. Applicant has carefully studied Momona's

discussion of stopping the transmission of the polling signal to an inactive slave station in

response to a request to stop the polling signals, which is not similar to interrupting the

transmission of the transmit authorizations when a data packet is received.

Momona teaches a conventional technique of a master station transmitting a control

signal called a "polling" signal to each slave station via the broadcast channel. The polling

signal contains information indicating an address of the addressed slave station and the channel

allocation amount. Upon receiving the polling signal addressed thereto, each slave station

transmits data of the channel allocation amount required for the next communication to the

master station. Based on the required channel allocation amount, the master station determines

the next channel allocation amount. Consequently, Momona discloses a polling method, which

allows for a dynamic control of channel allocations and efficient use of the channel (col. 1, lines

23 to 35).

Momona teaches a master station having means to stop sending the polling signal to any of the slave stations when it receives the signal from the slave station requiring it to stop transmitting the polling signals. In Momona, the slave station is provided with means for sending a signal requiring the master station to stop polling (col. 1, lines 54 to 68). Alternatively, the master station judges that the slave station is <u>not</u> communicating and stops sending the polling signals to the inactive slave station. Momona teaches that by not sending the polling signals to the inactive slave stations, efficient use of the channel is preserved (col. 2, lines 22 to 25).

In Momona, however, the master station stops transmitting the polling signals <u>only when a request signal to stop polling is received</u> from the slave station. In an alternative embodiment, Momona teaches that <u>when</u> the master station determines that <u>the slave station is inactive</u>, transmission of the polling signals is stopped. Momona fails to teach or suggest interrupting the transmission of the polling signals <u>in response to receiving data regarding the next communication</u>. That is, Momona's data provides data of channel allocation and amount required for the next communication (col. 1, lines 27 to 30). In other words, Momona attempts to stop transmitting the polling signals <u>to the inactive slave stations</u> and <u>not to the ones that send data to the master station</u> requesting allocation of the bandwidth.

Moreover, in Momona, the slave station <u>has to transmit a special request</u> to stop the transmission of the polling signals or the master station must have special judging means, which would determine that the slave station is inactive for a predetermined period of time. In short, the master station of Momona <u>does not stop transmitting the polling signals when data is received from the slave station</u>.

10

Therefore, "interrupting the transmission of transmit authorizations from the second

transmitting/receiving device to the first transmitting/receiving device when the data packet is

received," as set forth in claim 1 is not disclosed by Momona, which lacks interrupting the

transmission of the polling signals when receiving the data packet. For at least this exemplary

reason, Applicant respectfully submits that independent claim 1 is patentably distinguishable

from Momona. Applicant therefore respectfully requests the Examiner to withdraw this rejection

of independent claim 1. Also, Applicant respectfully submits that claims 2 and 3 are patentable

at least by virtue of their dependency on claim 1.

Claims 4 and 6-8

Next, the Examiner alleges that claims 4 and 6-8 are rejected under 35 U.S.C. § 102(b) as

being anticipated by U.S. Patent No. 5,963,557 to Eng (hereinafter "Eng"). Applicant

respectfully traverses this rejection and respectfully requests the Examiner to reconsider this

rejection in view of the comments, which follow.

Of these rejected claims 4 and 6-8, only claims 4 and 7 are independent. To begin, claim

4 requires among a number of unique features:

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wherein the first time period is shorter than a
second time period which adjoins the first time
period and in which no transmit authorizations
are sent to the second transmitting/receiving
device.
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The Examiner asserts that claim 4 is directed to a method for sending transmit authorizations

from the first device to the second device and is anticipated by the teachings of Eng. The

Examiner asserts that Eng's teaching of the mini-time slots and time slots are equivalent to

having a first time period adjoin a second longer time period in which no transmit authorizations

11

are sent to the second device (see page 5 of the Office Action). Applicant respectfully disagrees with the Examiner. Applicant has carefully studied Eng's discussion of the mini-time slots and regular time slots, which is not similar to having first time period adjoin a second, longer time period in which no transmit authorizations are sent.

Eng teaches enabling a point-to-point and a multicast communication in a network using three types of communication channels, namely, one or more upstream payload channels, one or more upstream control channels and one or more downstream channels. At least the upstream control and upstream payload channels can carry bit streams simultaneously; a bit stream may be simultaneously carried on the upstream control and upstream payload channels of a shared medium during overlapping periods of time. Each channel is divided into slots or mini-slots (see *Abstract*; col. 3, lines 5 to 18; col. 8, lines 13 to 32).

Eng further teaches that two types of packets are transmitted in the upstream and downstream channels, namely, "payload" packets and "control" packets. Payload packets carry user messages or user data to be communicated to a destination. Control packets carry control messages for allocating portions of the communication channels or other overhead control information. The slave stations write control packets into mini-slots of the upstream channel and write payload packets into slots of the upstream channel. The head end, the central controller, writes payload and control packets into slots of the downstream channel. For example, each slot of the downstream channel accepts a frame which includes one payload packet and one control packet because only the central controller writes control and payload packets into slots of the downstream channel (Fig. 3; col. 4, lines 17 to 32).

12

Eng, however, discloses a conventional technique where the upstream channel (one from the slave stations to the central controller) is split into mini slots and regular time slots, and that the slave stations write control packets into mini-slots of the upstream channel and write payload packets into the regular slots of the upstream channel. Eng, however, fails to disclose having the mini slot <u>adjoin</u> the regular slot. In fact, it is simply not the focus of Eng's teachings. In one embodiment of Eng's invention, a separate channel for the mini-slots and a separate channel for the regular slots are provided (col. 11, lines 11, lines 8 to 14).

Therefore, "the first time period is shorter than a second time period which adjoins the first time period and in which no transmit authorizations are sent to the second transmitting/receiving device" as set forth in claim 4 is not disclosed by Eng, which lacks disclosing the mini-slot adjoining the regular slot. For at least this exemplary reason, Applicant respectfully submits that independent claim 4 is patentably distinguishable from Eng. Applicant therefore respectfully requests the Examiner to withdraw this rejection of independent claim 4. Also, Applicant respectfully submits that claim 6 is patentable at least by virtue of its dependency on claim 4.

In addition, claim 6 recites: "at least in a time slot of the second time period, transmitting authorizations to a third transmitting/receiving device." As detailed above, Eng only teaches having <u>an upstream channel</u> split into mini-slots and regular slots but the control signals, *i.e.*, alleged authorization signals, are transmitted only in the mini-slots. Eng fails to teach or suggest transmitting authorizations in the regular slot, *i.e.*, the alleged second time period. For at least this additional reason, Applicant respectfully submits that claim 6 is patentably distinguishable from Eng.

Next, independent claim 7, among a number of unique features, recites:

> the control unit is capable of sending at least
> two transmit authorizations to the
> transmitting/receiving device and of interrupting
> the transmission of the transmit authorizations
> to the transmitting/receiving device as soon as
> the control center has received a data packet
> from the transmitting/receiving device.

The Examiner alleges that claim 7 is directed to a control center and is anticipated by Eng.

Specifically, the Examiner alleges that Eng's head end receiving a reservation request in the

mini-slot and responding by assigning one or more slots to each requesting subscriber is

equivalent to sending at least two transmit authorizations to the device and interrupting the

transmission of the authorizations as soon as the data packet arrived from this device as set forth

in claim 7 (see page 5 of the Office Action). Applicant respectfully disagrees. Applicant has

carefully studied Eng's method of assigning time slots, which is not similar to sending <u>at least</u>

<u>two authorization signals to the same device</u> and <u>interrupting the transmission</u> of authorization

signals as soon as the data packet is received from this device.

Applicant respectfully submits that the Examiner's rejection with respect to claim 7 as

being anticipated by Eng is not understood. In Eng, there is <u>no transmission of at least two slot</u>

<u>allocation control signals to the same device</u>, one signal could clearly suffice. Moreover, there is

<u>no interruption</u> of the allocation control signals when a payload packet is received. The

Examiner alleges that col. 4, lines 50 to 55 teaches the exemplary feature of claim 7. Col. 4,

lines 50 to 55 of Eng recite:

> [t]he head end 12 receives the reservation
> request control packets from the mini-slots and
> responds by assigning one or more slots to each
> requesting SS 50. The head end 12 then writes
> control packets into slots of the downstream

14

> channel DC indicating which slots were assigned
> to each SS 50.

As is visible from the cited passage above, there is <u>no teaching or suggestion of any</u>

<u>interruptions</u>. Moreover, the head end 12 receives <u>request control packets</u> and <u>not a payload</u>

<u>packet</u> (data packet).

Indeed, "the control unit is capable of sending at least two transmit authorizations to the

transmitting/receiving device and of interrupting the transmission of the transmit authorizations

to the transmitting/receiving device as soon as the control center has received a data packet from

the transmitting/receiving device," as set forth in claim 7, is not disclosed by Eng, which lacks

having the controller sending at least two control signals to the transmitting device and

interrupting the transmission of control signals as soon as a data packet is received from this

device. For at least these exemplary reasons, Applicant respectfully submits that claim 7 is

patentably distinguishable from Eng. Therefore, it is appropriate and necessary for the Examiner

to withdraw this rejection of claim 7. Claim 8 is patentable at least by virtue of its dependency.

<u>Claim Rejected under 35 U.S.C. § 103</u>

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Momona in view

of Eng. Applicant respectfully traverses this rejection in view of the following comments.

Claim 5 depends on claim 1. Applicant has already demonstrated that Momona does not teach or

suggest the unique features of claim 1 and that Eng also fails to teach or suggest at least some of

the unique features of claim 7, which are analogous to the argued features of claim 1. That is,

Eng does not cure the deficient teachings of Momona. Therefore, claim 1 is patentable over the

combined teachings of Momona and Eng. Claim 5 is patentable at least by virtue of its

dependency.

In addition, claim 5 recites: "time intervals between two transmit authorizations fulfilling predetermined delay jitter requirements." The Examiner acknowledges that Momona fails to teach or suggest this unique feature of claim 5. The Examiner, however, alleges that Eng suggests this unique feature of claim 5 because Eng teaches a technique of varying time division pattern of an upstream channel by modifying the ratio of mini-slots and slots (see page 6 of the Office Action). Applicant respectfully submits that Eng, however, fails to address the delay jitter. In fact, in Eng, there is no teaching or suggest that the delay jitter requirements are considered or taken into account in varying the time division pattern of the upstream channel.

For support of his position that Eng teaches varying the time slots to fulfill delay jitter requirements, the Examiner turns to col. 6, lines 35 to 40 of Eng, which recite:

> [t]o increase the utilization of the upstream channel UC, a technique of varying the time division pattern of the upstream channel UC into mini-slots and slots has also been proposed. This is illustrated in FIG. 6. At the top of FIG. 6, a fixed time division pattern of the upstream channel UC into slots and mini-slots is shown

As is visible from the above cited passage, however, there is no teaching or suggestion of the delay jitter. In fact, Eng does not teach or suggest whether the division pattern satisfies the delay jitter requirement. For at least this additional reason, Applicant respectfully submits that claim 5 is patentable over the combined teachings of Momona and Eng. Therefore, Applicant respectfully requests the Examiner to withdraw this rejection of claim 5.

New Claims

In order to provide more varied protection, Applicant adds claims 9-13. Claims 9-12 are

patentable at least by virtue of their dependency on claim 1 and claim 13 at least by virtue of its

dependency on claim 4.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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